PATENT

Application No. 10/032,698
Amendment dated September 29, 2003
Reply to Office Action of June 27, 2003

REMARKS/ARGUMENTS

Claims 1-19 and 21-27 are pending in this application. Claims 1, 2, 19, and 27 have been amended. Claim 20 has been canceled. No new matter has been added.

Claim 2 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claim 2 has been been amended.

Claims 1-21 and 23-27 were rejected under 35 U.S.C. § 102(e) as being anticipated by United States Patent Application Publication 2002/0130311 to Lieber et al. (Lieber). Applicants respectfully traverse the rejection.

Claim 1, as amended, recites, "the second environment releases a portion of the first chemical species from the active surface structure." Lieber does not teach, nor does it provide any motivation for, the release of a portion of the first chemical species from the active surface of the nanowire structure. The aforesaid release of the first chemical species results in the change in conductivity of the nanowire, and thus the change from the first electrical value to the second electrical value. Therefore, claim 1 is allowable. Claims 2-18, which depend from claim 1, are allowable at least for the reasons claim 1 is allowable.

Claim 19 recites, "illuminating energy onto the surface area of the nanowire structure to change the nanowire structure having the first chemical species from the first electrical state to a second electrical state whereupon the second electrical state allows a conduction characteristic of the nanowire to change from the first electrical state to the second electrical state, wherein the illuminating releases a portion of the first chemical species from the surface area of the nanowire structure." Lieber simply discloses a nanowire that comprises of a dopant, making the semiconductor magnetic or ferromagnetic. As stated above, Lieber does not teach, nor does it provide any motivation for, illumination of the surface area of the nanowire structure to release a portion of the first chemical species from the surface area of the nanowire structure. Claim 19 is allowable. Claims 21-26, which depend from claim 19, are allowable for being dependent upon allowable subject matter.

Claim 27, as amended, recites "the release of a portion of the first chemical species from the active surface structure varies with the intensity of electro-magnetic radiation

from the first level of electro-magnetic radiation and the second level of electro-magnetic radiation." Lieber does not teach illumination of the active surface structure to release a portion of the first chemical species from the active surface structure to affect the resistance value of the nanowire structure. Therefore, Claim 27 is allowable.

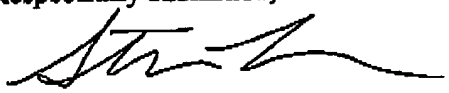
Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Lieber. Claim 22 depends from claim 19, and is allowable at least for the reasons claim 19 is allowable. In addition, claim 22 recites "the first chemical species can be selected from oxygen, NO2, H2O, NO, or SO2." The Examiner stated that one skilled in the art would be able to determine from routine experimentation that the use of O2, NO2, H2O, NO or SO2 would aid in changing the nanowire structure due to electromagnetic radiation. Applicants believe otherwise and ask the Examiner to provide support for the Examiner's assertion. On the contrary, Lieber provides no motivation to conduct such experimentation.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



Steve Y. Cho
Reg. No. 44,612

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, 8th Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300

Attachments
TYB/acc
60025542 v2